

SEMICONDUCTOR STRUCTURES HAVING REDUCED CONTACT RESISTANCE

Abstract of the Disclosure

The performance of nitride based diodes is currently limited by the resistivity of the ohmic contacts to the p-type GaN. The large value of the contact resistance contributes to a large voltage for device operation. This in turn causes device heating, making cw operation difficult and limiting the device lifetime. A layer of GaP or GaNP alloy between the GaN and the metal contact layer serves to bridge the energetic barrier between the GaN valence band and the metal Fermi level, thus enhancing the hole injection and reducing the contact resistance.

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Figures

Figure 1: A diagram showing a sequence of events or steps, likely related to a process or system. The diagram is oriented vertically and contains several small, illegible text elements and symbols.